

Timber wall and ceiling sealed with Resene Aquaclear Satin and right wall in Resene Zylone Sheen tinted to Resene Alabaster. Design by Totem Studio Architects, www.totemstudio.co.nz, build by Green Room Carpentry, www.greenroomcarpentry.com. Image by John Foster, www.foster.co.nz.

The choice is clear

When you're looking to toughen up, Resene's extensive range of transparent and semi-transparent finishes has you covered.

During the Space Race of the 20th century, and the subsequent technological leaps and bounds humans made in the 80s and 90s, people started fantasising about the potential for a hyper-advanced utopian future. This collective excitement about what we were capable of, and just how far we could go, was a time for dreaming – and with that came some spectacularly inventive architectural, interior and landscape designs, as well as some incredible manmade wonder materials to create them.

But in recent decades, as our lives have gotten increasingly complicated, we seem to have hit a breaking point. Our obsession with progress is bowing under our society's cumulative burnout, and the response has been to step back and refocus on self-care. It's a shift that has led to reinvigorated affection for honest, natural materials and enthusiasm for biophilic design.

Of course, humans have always been drawn to building and decorating with materials that evoke the beauty of nature. We are, at our core, just like any other animal and want to feel connected to the environment that surrounds us. But ideally, we want to achieve that while still enjoying all the pleasures, luxuries and safety that our society and technology offer.

The key difference between mankind's advanced wonder materials and the ones available straight from Mother Nature is how and when – or if – they breakdown. Even when you're going for an 'unfinished' look that showcases nature's treasures in all their glory, the inevitable ravages of time, use and environmental exposure mean these natural materials need to have their lifespans lengthened with a durable topcoat or finish to make them feasible for use and protect their good looks.

Whether it be a paint, wood stain or clear finish, when we use a coating on a building material, we're unapologetically trying to stop the forces of nature; to slow down or, ultimately, halt its biodegradation. We want to keep that beauty in stasis so that it can be enjoyed for the life of the structure. Resene Technical Director Colin Gooch has spent more than five decades focused on developing products that attempt to do just that.

"The best thing we could hope to do is to make a coating so good that it completely protects the substrate," says Colin. It's still a work in progress, as with every material comes different properties, uses and demands – and, therefore, the need for different coatings to keep it looking and functioning at its best. The fruits of his team's labour have yielded higher performance and a greater number of decorative and protective Resene coatings to choose from than ever before.

With so many amazing products to choose from, it can be difficult for even the most seasoned professional to know what to use where and when. Here, we look at what transparent and semi-transparent Resene finishes are available and what they do, clarify common misconceptions and share plenty of top technical tips so that the next time you need to pick a product, the choice should be crystal clear.

Fit for use

Resene Technical Manager Mike Clowes says that when specifiers, builders or tradies ring him up for advice on clear finishes, there are some key decisions that need to be made before he can offer up a recommendation.

"We need to know what they're looking for from the product. Do they want it to just be functional or are they looking for a certain aesthetic as well? What material is it going to be put on, what is going to come into contact with it and what sort of demands are expected in terms of the longevity of the system? Those are really key factors that need to be determined first, because they all affect the maintenance," says Mike.

Rain or shine

To say that New Zealand's and Australia's uniquely harsh climates make weatherproofing materials a challenge is a bit of an understatement.

One misunderstanding that Colin says comes up time and time again is when designers are wanting the aesthetic look of 'unfinished' timber, especially outdoors. The news that it isn't feasible here can be a hard pill to swallow and ignoring the heed can prove costly.

Resene
Villa White



"It's a common want, but the reality is that it's not actually achievable," says Colin. "You're trying to fight a losing battle against nature, but nature has time on its side."

The reason is that it is the very nature of what makes a transparent finish transparent that makes it unsuitable for exteriors; a clear substance always lets light pass through. That means that even top of the line clear exterior finishes do not – and cannot – prevent UV light from attacking the surface of the timber.

"Our relentless UV light causes timber to lose its colour and grey," explains Colin. "With cedar, for instance, 3-5 months down the road, parts of that beautiful orange will go grey. If you put a clear finish on, it will add a certain amount of protection, but it won't be enough to stop UV from passing through on to the timber, degrading the surface causing the timber to start breaking down."

Direct and indirect UV light will also attack the timber inside a house, bleaching the natural colour out of a lot of flooring timbers such as rimu, warns Colin.

did you know?

Resene has a long history of producing clear finishes. Resene used to manufacture clear coatings for use on wallpaper prior to the invention of vinyl wallpapers.

below: When you pick a paver to complement your project, chances are you won't want the look to change much once you apply a protective clear coating. The top halves of these five different pavers have been finished in two coats of Resene Walk-on Concrete Clear and prove that protection need not sacrifice style.

Top tips

- + Prime the surface of your exterior timber the same day as you sand it to protect it from the moisture and dew that naturally develops overnight.
- + Oil-based polyurethanes take longer to dry and cure than waterbased, so plan accordingly and follow the directions on the pack and data sheets.
- + Use Resene Walk-on Concrete Clear over Resene Aquapel on concrete or plaster for a surface that's both water-repellent and easy to clean.

"It's just like putting sunblock on your nose – you can put tons of SPF50 on, but it'll still burn eventually."

"In short, we don't generally advise people to just put a clear coat on exterior surfaces – especially when it comes to timber," says Mike. "We recommend using an exterior wood stain or consider using a painted finish instead. With a clear coat alone, and even with a stain to a certain extent, you're going to have to start your maintenance program earlier, so it's really important that the specifier, painter and their client understand that and make a decision as to how it's going to be maintained and who is going to do it."

Stain smart

If you do choose to use semi-transparent wood stains outdoors, choose a colour that's most similar to the timber's inherent hue to get the most natural look and opt for a penetrating stain from the Resene Woodsman range, or choose a lighter or darker colour if you want to change the colour of the timber.

"If you want to go for a deeper coloured wood stain, it's wise to go for a Resene CoolColour formula to help reduce the incidence of cupping and warping," suggests Mike. Resene CoolColours look just like normal colours, but thanks to special pigment technology, they reflect more heat back so that the surface doesn't get as hot

as a normal colour would – which can help to protect your substrate.

But regardless of whether you're going for a lighter or darker look, it's essential to put thoughtful planning into where you'll be using wood stains right from your project's design phase. "Make sure it's somewhere you can easily reach it, because you're going to have to maintain it," reminds Colin.

Any exterior timber that hasn't been painted will need to be looked after and recoated regularly. As soon as that work needs to be done at height, it's likely going to require scaffolding – a prospect that can cost thousands to tens of thousands of dollars each time your client needs to recoat it.

Enough is enough

Mike says that one of the biggest problems that comes up in the field is when those applying the product put far too much on, which is known as 'overbuild'.

"I think there is an assumption that if you just pile on more and more material that it's going to help with protection, but that can be a mode of failure. Stains need to penetrate, and if you just keep lashing it on, it's going to build up a film – and that film can end up flaking off, which is not what you want when you go to recoat it. It's important that if the instructions say 'apply

and then wipe off the excess' that you do indeed wipe off the excess, because that will help control the weight of it and the mode of failure."

However, different issues can arise with not using enough. "Some people will only apply one coat of a product, because it'll already look great and they want it to stay that way, even though the instructions or specification calls for two or three coats," says Colin. "It's equally important to apply enough coats as it is to avoid applying too much so that product performs as intended."

Waterborne versus solventborne

When it comes to interior work, both oil- and water-based polyurethane can be applied over waterborne paint; however, it's worth noting that oil-based polyurethanes tend to impart an amber hue, especially when used over lighter colours. Waterborne finishes, on the other hand, are more likely to have a slightly cloudy appearance.

"There are many obvious differences between solventborne and waterborne varnishes or clears, but that's the one fundamental difference which would be valuable to understand," says Colin. "Waterborne urethanes are quite white and milky – even when there is nothing in them, so they're better suited to MDF and light to white timbers more than solventborne clear coats, because they're always going to look whiter. Solventborne varnishes are great for accentuating the yellows that occur naturally in rimu and cedar."

Colin explains that the substances that make up solventborne urethanes are very small, molecularly speaking, and bond up well with other materials. Waterborne products, however, are a dispersion of very small insoluble balls. "Even though they're small – about 100 nanometres – they're still much larger than the molecules in a solventborne product. And some of these particles stick together and make even bigger particles, so you can't get the same depth of colour.

"Whatever your substrate, whether it's timber, concrete, fibre cement or something else, there are always plenty of very fine pores in the surface. When you apply a solution to a porous surface, it'll flush out that air from those tiny holes so you'll get base contact with that surface. The waterborne polymer particles



above: Resene Walk-on Concrete Clear Wet Look (used on this series of river rocks) is a solventborne gloss clear designed to achieve a wet look on substrates subject to pedestrian and light vehicular traffic. It penetrates into the concrete to highlight the colour patina of concrete. While it has plenty of uses, it looks particularly great on exposed aggregate driveways.

top tip

Higher gloss finishes will be more slippery when wet than lower gloss finishes. Usually, higher gloss finishes are best applied over a surface that is already textured to give shoes and feet something to grip onto.

aren't small enough to get into those holes, so they'll sit on top of the surface even though the water gets in there. When the water evaporates, the air will get back in there again. The film forming process does not allow for that totally intimate contact – sometimes that's good, sometimes that's bad. Over bare timber, solventborne urethanes will always produce a deeper, richer or warmer colour than a waterborne urethane."

Hard-wearing walls

One of Resene's newest offerings in its clear finishes range is Resene SpaceCote Clear. It's the ideal coating to use indoors on higher wear areas, especially over darker colours, which have a greater chance of marking if exposed to rough contact.

"We initially brought Resene SpaceCote Clear out for use over Resene SmartTouch conductive coating, a product that people would be touching all the time in order to interact with it. It's matched to the gloss level of Resene SpaceCote Low Sheen so that you can put it over just one wall – the one with Resene SmartTouch on it – and still have it look the same as your other three walls. But it's also great for hallways, stairways and heavy wear commercial areas to protect them and make them easier to clean," says Colin.

"Anything without pigmentation in it is more easily cleaned. If a product is clear, it's generally just resin binding to resin. But when you have a pigment binding to resin, it's not going to stick as well because they don't interface."

When it's a stretch

Resene Clearcoat UVS is the recommended topcoat to use outdoors over painted details to filter out UV light and help the colour last longer. It's ideal to use on areas that are hard to reach. Colin says that it's a good

choice for applying over low gloss finishes and generally recommends its use over Resene Lumbersider.

"Two coats are ideal as it can be easy to miss a spot as you're applying it; but if you start with a lower gloss basecoat such as Resene Lumbersider this will also help make it easier to see due to the contrast in sheen levels. Resene Clearcoat UVS is glossy, so it looks especially great when used over bright colours."

What's underfoot

Bare industrial and domestic concrete floors can be a dust trap that get increasingly difficult to clean as dust collects in the undulations of the surface that are invisible to the naked eye. So, it's best to seal and protect them from the get-go before ongoing maintenance becomes a bigger issue.

Colin says that it is important to seal concrete not only to maintain its appearance but also to protect it from mould, which will detract from your overall look. "Once concrete goes grey and mottled, it can attract mould. Mould grows when you have something to hold on to, but if the surface is smooth and the water is running off it, mould isn't likely to be able to grip as well. Concrete grows mould and holds on to salts incredibly well, which can discolour the surface."

For interior timber and timber composite flooring, there are three recommended systems. Firstly, the Resene Qristal ClearFloor range, which is tailored for DIY projects and residential painters. Secondly, there's the Resene ProSelect range for when the product will be applied by professional applicators. Like Resene Qristal ClearFloor, Resene ProSelect uses waterborne technology with minimal odour but should only be applied by an experienced and trained applicator. Lastly, there's Resene Polythane, which carries a strong odour, so it's recommended as a tough coating for less sensitive settings like gymnasiums, indoor courts and industrial work floors.

Paving the way

Traditionally, those who wanted to put a clear coating on concrete or pavers would apply a solventbased product on them, says Colin. "Subsequently, we developed Resene

Resene
Villa White

Resene Concrete Clear
waterborne coating (flat, two
coats applied on left side)

above right:

Resene Concrete Clear is a tough waterborne finish for use on concrete and brick surfaces. It's non-yellowing, resistant to alkaline cleansers, chipping, peeling, oil and fat splashes. Plus, it's waterbased so it's low odour and easy to wash up in water. Suitable for interior and exterior use and available in three sheen levels – flat, satin and gloss.

below right:

Concrete benchtops and floors look superb when first installed, but after some wear and tear, dust and dirt can get entrained into the surface and it can be near impossible to get the surface truly clean again. Apply Resene Concrete Wax waterborne satin when the surface is new to keep it looking great.

below: UV light gradually breaks down vulnerable pigments in the final topcoat resulting in a faded paint finish. Bright organic hues, such as reds, are more prone to this than hues based on durable oxides. This Resene Dynamite finial was topcoated with Resene Clearcoat UVS when it was last painted ten years ago and has stood up to everything Mother Nature has thrown at it.

Resene
Dynamite



Walk-on Concrete Clear – it’s a relatively thin, satin coating that doesn’t penetrate as much, so the finish looks more natural, but it makes it more durable and easier to clean without reducing its slip resistance. Plus, it will help keep dripped grease from soaking in beneath a barbecue.”

For those looking for more shine, similar to the way pavement looks after fresh rainfall, there’s Resene Walk-on Concrete Clear Wet Look – a product particularly fit for aggregate driveways.

Take it to the next level

For architects and designers looking to achieve interesting and unique effects, Colin points out that you may wish to mix subtle colours into popular interior and exterior clear finishes, in which case you should look to the Resene Colorwood Enhance range, which can lighten or darken finishes. It comes as a small pot and can be blended into a range of other products to change the look.

“While Resene Colorwood Enhance was initially developed for colouring interior timber clears, it can also be used in exterior waterborne clears including Resene Concrete Clear, Resene XC-700 and Resene Walk-on Concrete Clear to subtly change the look and colour of concrete,” says Colin.

The power of prep

The performance of anything you put on last, such as a clear coating, is always going to be dependent on what’s underneath. Whether you’re dealing with a new build or bringing an older one up to snuff, it’s important to put in the effort into surface

top tips

+ Before topcoating with Resene Aquaclear, use Resene Colorwood Enhance in the first coat to add extra depth and colour to your timber.

+ For a natural look on interior timber ceilings and wall panelling, apply Resene Aquaclear Natural. It will protect the surface and make it easier to wipe clean.

right: Resene Aquaclear waterborne urethane is Resene’s popular choice for topcoating interior timber and plywood walls and ceilings. Design and build by SGA Architects, www.sgaltd.co.nz. Image by Ross Keane.

preparation, priming and base coating – and to choose the right products for the job.

“Preparation is always key. The less care you put into preparing a surface, the more likely what you put on top of it is going to fail,” says Mike.

“Resene’s instructions and data sheets are really useful, and if people go to the trouble of reading though them and then calling or going to a Resene ColorShop if they have other questions, they’re going to get really good advice – which is what is going to lead to a successful result.” **BW**



Resene
Cape Palliser

Resene
Villa White

Most picked

Over paint

Exterior/interior

+ Over exterior/interior paint:

Resene Concrete Clear - clear waterborne coating – flat, satin, gloss

Use on: Waterborne acrylic coated surfaces except working joinery.

+ For surfaces prone to graffiti:

Resene Uracryl GraffitiShield - clear anti-graffiti finish - gloss, semi-gloss, flat

Exterior only

+ For added exterior UV protection on waterborne acrylic coated surfaces:

Resene Clearcoat UVS - clear waterborne UV protective glaze gloss

Use on: All exterior waterborne acrylic coated surfaces except working joinery.

Interior only

+ Over interior painted or wallpapered plasterboard:

Resene SpaceCote Clear - clear waterborne low sheen

Use on: Broadwall paint finishes and Mason wallpaper.

For porous materials

Interior/exterior

Resene Aquapel & Terracotta Sealer waterborne clear water repellent treatment

Use on: Most porous building materials, terracotta and as a protective finish over Resene FX Faux Rust Effect Can be used on its own or as a primer under waterborne coatings.

These recommendations are general guidelines. Always check with a Resene representative or your local Resene ColorShop for advice and product recommendations specific to your project.

For concrete

Exterior/interior

+ For direct to surface:

Resene Concrete Clear - clear waterborne concrete coating - flat, satin, gloss

Use on: Brickwork/artificial brickwork, fibre cement, high build acrylics, masonry surfaces, plaster.

+ For surfaces prone to graffiti:

Resene Uracryl GraffitiShield - clear anti-graffiti finish - gloss, semi-gloss and flat

Exterior only

+ For concrete and masonry structural and retaining walls:

Resene XC-700 - clear high build concrete and masonry finish

Use on: Concrete

Resene Concrete Stain is a solventborne stain available in a range of hues designed specifically for concrete, pavers and brick. It performs best on porous concrete, penetrating into the substrate to forming a low sheen finish that is both decorative and protective. It's also available as a clear Resene Concrete Conservator to help you keep the surface cleaner without changing the surface colour.

masonry and honed concrete walls.

Exterior foot traffic areas

+ For exterior concrete and pavers:

Resene Walk-on Concrete Clear - waterborne protection for concrete and pavers

Use on: Domestic surfaces and light industrial surface areas.

+ For a wet look on concrete:

Resene Walk-on Concrete

did you know?

Clear Wet Look -

solventborne protection for concrete and pavers

Use on: Brick, cobblestones, concrete, driveways, light industrial floors, paths, patios, steps, swimming pool surrounds and unglazed tiles.

Interior only

+ For non-decorative concrete in trafficable areas:

Resene Cemseal - waterborne concrete sealer and dust coat

Use on: Industrial and domestic concrete floors and trafficable areas where a low cost, easily applied and maintained method of controlling concrete dusting is required.

+ On floors and benchtops:

Resene Concrete Wax - clear waterborne satin

Can also be used as a protective finish over interior flooring finished in Resene Walk-on.

colour, apply Resene Colorwood first.

Exterior

Do not use clear finishes on exterior timber. For a natural look, choose a wood stain close in colour to the original timber colour.

+ For walls/fences:

Resene Waterborne Woodsman

+ For decks:

Resene Woodsman, Resene Woodsman Decking Oil Stain or Resene Furniture and Decking Oil

Resene Concrete Clear waterborne coating interior/exterior (flat, two coats)

Resene Concrete Wax waterborne satin glaze interior only (two coats)

above and right:

Try Resene Concrete Clear waterborne coating over both painted concrete or direct to surface applications (shown on smooth concrete ring above). For indoor floors and benchtops, try Resene Concrete Wax clear waterborne satin glaze (shown on smooth concrete ring at right).

below: The three sticks have been given two coats each in (from left to right) Resene Aquaclear waterborne urethane varnish (satin), Resene Qristal ClearFloor 1K (satin) and Resene Qristal Clear polyurethane (satin) to show how waterborne formulas are milkier whereas polyurethanes can look yellow on pale woods. The same three products have also been applied in two coats (from top to bottom) on the clothes pegs.

For timber

Interior

To adjust the timber colour use Resene Colorwood or Resene Colorwood Enhance

+ For decorative timber:

- Resene Aquaclear clear waterborne urethane varnish - flat, satin, gloss

Use on: Cork, desks, doors, fibre and particle board, furniture, panelling, parquet, skirtings, solid timber and veneers (satin, semi-gloss and gloss finish), timber walls and ceilings (flat natural finish).

- Resene Qristal Clear - clear polyurethane - flat, satin, gloss

Use on: Architraves, desks, doors, fibre and particle board, furniture, panelling, plywood, skirtings, timber, veneers.

+ For flooring:

- Resene Qristal ClearFloor clear waterborne flooring urethane - satin

Use on: DIY or residential timber or timber composite flooring. May be mixed with Resene Colorwood Enhance to add additional colour to timber.

- Resene ProSelect professional timber flooring finish

Use on: Timber flooring, must be applied by a trained and experienced applicator.

+ For extra durability:

Resene Polythane clear gloss solventborne polyurethane

Use on: Concrete formwork, cork and parquet flooring, corridors, fibre and particle board, gymnasiums, halls, indoor courts, timber and work floors. To adjust the timber

